Remarks

In view of the above amendments and the following remarks, reconsideration and further examination are requested.

Claims 1-9 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1-9 have been amended so as to address this rejection. As a result withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

Claims 1-3 and 5-9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada (JP 08084447) in view of Takayanagi (JP 11018390). Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Yamada in view of Takayanagi and further in view of Sakata (JP 06236807).

Claims 1 and 9 have been amended so as to further distinguish the present invention from the references relied upon in the rejections.

Further, claims 1-9 have been amended to make a number of editorial revisions. These revisions have been made to place the claims in better U.S. form. None of these amendments have been made to narrow the scope of protection of the claims, nor to address issues related to patentability and therefore, these amendments should not be construed as limiting the scope of equivalents of the claimed features offered by the Doctrine of Equivalents.

In addition, new claims 10 and 11 have been added. Support for new claims 10 and 11 can be found at least at page 8, lines 6-16 of the original specification.

The above-mentioned rejections are submitted to no longer be applicable to the present invention for the following reasons.

Claims 1 and 9 are patentable over the combination of Yamada and Takayanagi, since each of these claims recites, in part, an arc-shaped permanent magnet, wherein an outer surface of the arc-shaped permanent magnet at ends of the arc-shaped permanent magnetic in a thrust direction fit along an inner surface of a soft-magnetic frame, and middle regions of the outer surface of the arc-shaped permanent magnet at ends of the arc-shaped permanent magnet in a circumferential direction and between the outer surface at the ends in the thrust direction are recessed with respect to the outer surface at the ends in the thrust direction. The combination of Yamada and Takayanagi fails to disclose or suggest an arc-shaped permanent magnet as recited in claims 1 and 9.

Yamada discloses a small motor having a motor case 1, two arc-shaped permanent magnets 2 and 3, and two U-shaped springs 4 and 5 which hold the magnets 2 and 3 in the motor case 1. The motor case 1 is shaped such that two of its sides are arced to the same degree as that of the magnets 2 and 3. As a result, the outer surfaces of the magnets 2 and 3 are in complete contact with the corresponding sides of the motor case 1 when the springs 4 and 5 hold the magnets 2 and 3 in place. (See abstract and Figures 1-3).

Based on the above discussion of Yamada, it is apparent that neither of the magnets 2 and 3 have middle regions of their outer surface at ends in a circumferential direction and between ends in a thrust direction of the arc-shaped permanent magnet that are recessed with respect to the ends in the thrust direction, as is recited with regard to arc-shaped permanent magnet of claim 1. In order words, neither of the magnets 2 and 3 of Yamada have recessed middle regions located along their outer circumferences near where they are in contact with the springs 4 and 5, respectively, and between ends of the magnets 2 and 3 which are in contact with the motor case 1. Therefore, Yamada fails to disclose or suggest this aspect of the arc-shaped permanent magnet recited in claims 1 and 9. As a result, Takayanagi must disclose or suggest this feature of the arc-shaped permanent magnet of claims 1 and 9 in order for the combination of Yamada and Takayanagi to render claims 1 and 9 obvious.

Takayanagi discloses a small motor having a cylindrical housing 2 with a pair of arc-shaped magnets 1 disposed therein. (See abstract and Figure 12). However, as can be clearly seen from Figure 12, two of the sides of the housing 2 are arced such that the outer surfaces of the magnets 1 are completely in contact with these sides of the housing 2. Based on this, it is apparent that Takayanagi also fails to disclose or suggest middle regions of an outer surface at ends of an arc-shaped permanent magnet in a circumferential direction and between ends of the arc-shaped permanent magnet in the thrust direction that are recessed with respect to the ends in the thrust direction, which feature is recited in claims 1 and 9. Therefore, Takayanagi fails to address the deficiency of Yamada. As a result, the combination of Yamada and Takayanagi fails to disclose or suggest the present invention as recited in claims 1 and 9.

As for Sakata, it is relied upon as disclosing an arc-shaped magnet having "a thickness of 0.1 mm or larger and to be less than 1.0 mm." However, Sakata also fails to disclose or suggest the above-discussed feature of claims 1 and 9.

Because of the above-mentioned distinctions, it is believed clear that claims 1-11 are allowable over the references relied upon in the rejections. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-11. Therefore, it is submitted that claims 1-11 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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